10/577382 1AP20 RCC Dkt. 68548-PCT-US/JPW/JW

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Shi Du Yan, et al.

U.S. Serial No. : Not Yet Known (national stage of PCT

International Application No.

PCT/US2004/036173)

Filed : Herewith

For : METHODS FOR REDUCING SEIZURE-INDUCED

NEURONAL DAMAGE

1185 Avenue of the Americas New York, New York 10036

April 27, 2006

Mail Stop PCT Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

## INFORMATION DISCLOSURE STATEMENT

In order to ensure compliance with applicants' duty of disclosure under 37 C.F.R. §1.56 and §1.97(a)-(d), applicants request that the following documents be considered and made of record in the above-identified application which is listed on Form PTO-1449, attached hereto as **Exhibit A**:

- International Search Report issued by the International Searching Authority (ISA/US) on April 7, 2005 in connection with International Application No. PCT/US2004/036173 (Exhibit 1);
- 2. Tsuji H, Iehara N, Masegi T, Imura M, Ohkawa J, Arai H, Ishii K, Kita T, and Doi T. (1998) Ribozyme Targeting of Receptor for Advanced Glycation End Products in Mouse Mesangial Cells. Biochem. Biophys. Res. Commun. 245: 583-588 (Exhibit 2);



Applicants: Shi Du Yan, et al. U.S. Serial No.: Not Yet Known

Filed: Herewith

Page 2

- 3. Bierhaus A, Illmer T, Kasper M, Luther T, Quehenberger P, Tritschler H, Wahl P, Ziegler R, Müller M, and Nawroth PP. (1997) Advanced Glycation End Product (AGE)-Mediated Induction of Tissue Factor in Cultured Endothelial Cells Is Dependent on RAGE. Circulation 96: 2262-2271 (Exhibit 3);
- 4. Sajithlal G, Huttunen H, Rauvala H, and Münch G. (2002)
  Receptor for Advanced Glycation End Products Plays a
  More Important Role in Cellular Survival than in
  Neurite Outgrowth during Retinoic Acid-induced
  Differentiation of Neuroblastoma Cells. J. Biol. Chem.
  277(9): 6888-6897 (Exhibit 4);
- 5. Yan SD, Chen X, Fu J, Chen M, Zhu H, Roher A, Slattery T, Zhao L, Nagashima M, Morser J, Migheli A, Nawroth P, Stern D, and Schmidt AM. (1996) RAGE and amyloid-β peptide neurotoxicity in Alzheimer's disease. Nature 382: 685-691 (Exhibit 5);
- 6. U.S. Patent No. 6,506,559 B1 (FIRE et al.), published January 14, 2003 (Exhibit 6);
- 7. U.S. Patent Application Publication No. 2003/0013699 A1 (DAVIS et al.), published January 16, 2003 (Exhibit 7);
- 8. Jen K-Y and Gewirtz AM. (2000) Suppression of Gene Expression by Targeted Disruption of Messenger RNA: Available Option and Current Strategies. Stem Cells 18: 307-319 (Exhibit 8);
- 9. Branch AD. (1998) A good antisense molecule is hard to find. TIBS 23: 45-50 (Exhibit 9);

Applicants: Shi Du Yan, et al. U.S. Serial No.: Not Yet Known

Filed: Herewith

Page 3

- 10. Green DW, Roh H, Pippin J, and Drebin JA. (2000)
  Antisense Oligonucleotides: An Evolving Technology for the Modulation of Gene Expression in Human Disease. J. Am. Coll. Surg. 191(1): 93-105 (Exhibit 10);
- 11. Fire A. (1999) RNA-triggered gene silencing. TIG 15(9):
  358-363 (Exhibit 11);
- 12. Caplen NJ, Fleenor J, Fire A, and Morgan RA. (2000) dsRNA-mediated gene silencing in cultured *Drosophila* cells: a tissue culture model for the analysis of RNA interference. *Gene* 252: 95-105 (Exhibit 12);
- 13. Fire A, Xu S, Montgomery MK, Kostas SA, Driver SE, and Mello CC. (1998) Potent and specific genetic interference by double-stranded RNA in *Caenorhabditis* elegans. Nature 391: 806-811 (Exhibit 13);
- 14. Lue L-F, Walker DG, and Rogers J. (2001) Modeling microglial activation in Alzheimer's disease with human postmortem microglial cultures. *Neurobiol. Aging* 22: 945-956 (Exhibit 14);
- 15. Carmeliet P, Moons L, and Collen D. (1998) Mouse models of angiogenesis, arterial stenosis, atherosclerosis and hemostasis. *Cardiovasc. Res.* 39: 8-33 (Exhibit 15); and
- International Searching 16. Written Opinion the of issued the International Searching Authority by Authority (ISA/US) on April 7, 2005 in connection with PCT/US2004/036173 International Application No. (Exhibit 16).

Applicants: Shi Du Yan, et al. U.S. Serial No.: Not Yet Known

Filed: Herewith

Page 4

10/577382

IAP20 REC'S FULL TO 27 APR 2006

Copies of documents numbers 1-16 are attached hereto as **Exhibits**1-16, respectively.

No fee is deemed necessary in connection with the filing of this Information Disclosure Statement. However, if any fee is required, authorization is hereby given to charge the amount of such fee to Deposit Account No. 03-3125.

Respectfully submitted,

John P. White

Registration No. 28,678 Attorney for Applicants

Cooper & Dunham LLP

1185 Avenue of the Americas New York, New York 10036

(212) 278-0400

Approved for use to	APR 2006 through 07/31/2006. OMB 0651-003
---------------------	--

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO		Complete if Known				
			Application Number	NOT YET KNOWN		
INFORMAT	ION DIS	CLOSURE	Filing Date	Herewith 1577382		
STATEMENT BY APPLICANT			First Named Inventor	Shi Du Yan		
41			Art Unit			
(Use as many sheets as necessary)			Examiner Name			
Sheet 1	of	3	Attorney Docket Number	68548-PCT-US/JPW/JW		

Examiner	Cite	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of	Ĭ
Initials*	No. <sup>1</sup>	the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	1	International Search Report issued by the International Searching Authority (ISA/US) on April 7, 2005 in connection with International Application No. PCT/US2004/036173	
	2	Tsuji H, lehara N, Masegi T, Imura M, Ohkawa J, Arai H, Ishii K, Kita T, and Doi T. (1998) Ribozyme Targeting of Receptor for Advanced Glycation End Products in Mouse Mesangial Cells. Biochem. Biophys. Res. Commun. 245: 583-588	
	3	Bierhaus A, Illmer T, Kasper M, Luther T, Quehenberger P, Tritschler H, Wahl P, Ziegler R, Müller M, and Nawroth PP. (1997) Advanced Glycation End Product (AGE)-Mediated Induction of Tissue Factor in Cultured Endothelial Cells Is Dependent on RAGE. Circulation 96: 2262-2271	
····	4	Sajithlal G, Huttunen H, Rauvala H, and Münch G. (2002) Receptor for Advanced Glycation End Products Plays a More Important Role in Cellular Survival than in Neurite Outgrowth during Retinoic Acid-induced Differentiation of Neuroblastoma Cells. J. Biol. Chem. 277(9): 6888-6897	
	5	Yan SD, Chen X, Fu J, Chen M, Zhu H, Roher A, Slattery T, Zhao L, Nagashima M, Morser J, Migheli A, Nawroth P, Stern D, and Schmidt AM. (1996) RAGE and amyloid-β peptide neurotoxicity in Alzhelmer's disease. Nature 382: 685-691	
	8	Jen K-Y and Gewirtz AM. (2000) Suppression of Gene Expression by Targeted Disruption of Messenger RNA: Available Option and Current Strategies. Stem Cells 18: 307-319	
	9	Branch AD. (1998) A good antisense molecule is hard to find. TIBS 23: 45-50	
	10	Green DW, Roh H, Pippin J, and Drebin JA. (2000) Antisense Oligonucleotides: An Evolving Technology for the Modulation of Gene Expression in Human Disease. J. Am. Coll. Surg. 191(1): 93-105	
• •	111	Fire A. (1999) RNA-triggered gene silencing. TIG 15(9): 358-363	
	12	Caplen NJ, Fleenor J, Fire A, and Morgan RA. (2000) dsRNA-mediated gene silencing in cultured Drosophila cells: a tissue culture model for the analysis of RNA interference. Gene 252: 95-105	

Examiner	Date	
Signature	Considered	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Applicants: Shi Du Yan, et al.
U.S. Serial No. NOT YET KNOWN
Filed: Herewith (as §371 national stage of PCT/US2004/036173)
Exhibit A

Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

## IAP20 Rec'd FG. FTO 27 APR 2006

PTO/SB/08B (07-05)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO		Complete if Known			
			Application Number	NOTYET KNOWN 7 3 8 2	
INFORMAT	ION DIS	CLOSURE	Filing Date	Herewith	
STATEMENT BY APPLICANT			First Named Inventor	Shi Du Yan	
// table ==			Art Unit		
(Use as many sheets as necessary)			Examiner Name		
Sheet 2	of	3	Attorney Docket Number	68548-PCT-US/JPW/JW	

Examiner	Cite	NON PATENT LITERATURE DOCUMENTS  Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of	
Initials*	No.1	the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	13	Fire A, Xu S, Montgomery MK, Kostas SA, Driver SE, and Mello CC. (1998) Potent and specific genetic interference by double- stranded RNA in Caenorhabditis elegans. Nature 391: 806-811	
	14	Lue L-F, Walker DG, and Rogers J. (2001) Modeling microglial activation in Alzheimer's disease with human postmortem microglial cultures. Neurobiol. Aging 22: 945-956	
	15	Carmeliet P, Moons L, and Collen D. (1998) Mouse models of angiogenesis, arterial stenosis, atherosclerosis and hemostasis.   Cardiovasc. Res. 39: 8-33	
	16	Written Opinion of the International Searching Authority issued by the International Searching Authority (ISA/US) on April 7, 2005 in connection with International Application No. PCT/US2004/036173	
	<u></u>		
	-		

Examiner Signature Date Considered

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

## 1AP20R3S'UPGTT10 27 APR 2006

PTO/SB/08A (07-05) Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Complete if Known Substitute for form 1449/PTO **Application Number** NOT YET/KNOWNS Herewith Filing Date INFORMATION DISCLOSURE First Named Inventor Shi Du Yan STATEMENT BY APPLICANT Art Unit (Use as many sheets as necessary) **Examiner Name Attorney Docket Number** 68548-PCT-US/JPW/JW of Sheet

U. S. PATENT DOCUMENTS						
Examiner Initials*	Cite No.1	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant	
	Number-Kind Code <sup>2 (# known)</sup>		Figures Appear			
	6	<sup>US-</sup> 6,506,559 B1	01-14-2003	FIRE et al.		
	7	<sup>US-</sup> 2003/0013699 A1	01-16-2003	DAVIS et al.		
		US-				
		US-				
,		US-				
<del>-</del>		US-				
		US-				
		US-				
		US-				
		US				
		US-				
		US-				
		US-				
		US-				
		US-				
		U\$-				
		US-				
		US-				
	1	US-				

		FORE	<b>IGN PATENT DOCU</b>	MENTS		
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages	
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	MM-DD-YYYY		Or Relevant Figures Appear	T <sup>6</sup>
		· · · · · · · · · · · · · · · · · · ·				

	·		
Examiner		Date	
Signature		Considered	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.